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ABSTRACT

Three studies of children's sharing behavior were designed to discover the effects of success or failure on children's willingness to share material rewards with others. In two studies, age differences in willingness to share were noted. Extensive discussion of the results indicates how a child's self concept might influence a child's sharing. The third study explored the influence of variation in deserving on sharing behavior. Children who thought they deserved the reward shared less than children who thought they had not earned the reward. (DP)

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# Childrens' Sharing Behavior: Success and Failure, the "Norm of Deserving" and Reciprocity in Sharing

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Part I

In this paper I will describe and discuss three experiments on sharing behavior that we have done in the course of the last few years, with primary emphasis on the third, large scale experiment. In the course of describing these experiments I will make several theoretical points, but I will primarily try to show that "a norm of deserving" affects the willingness to share material possessions. That is, when children (and probably to some degree adults) feel that they received material rewards because of their good work, that they earned and thus deserved these rewards, their willingness to share them will be less than if they receive rewards without having earned and thus without having deserved them.

The first experiment I want to report explored the effects of success or failure on children's willingness to share material rewards with others. This is an experiment that I did some time ago (Staub 1968) but it is necessary to describe it as a background for the other experiments. Before we conducted this study, Berkowitz and Connor (1966) did an experiment to find out whether following success or failure people work more or less hard on a task when their productivity is to the advantage of another person. They found that failure on a previous task decreased the willingness to help the other person, while success enhanced the willingness to help. In our culture material possessions might be a source of satisfaction or source of good feelings. One consequence of success might be to reduce the significance of material possessions to people, because success makes them feel good, and since they feel good it is not that important to have material possessions to make them feel good.

In our experiment we manipulated childrens' success and failure. We used the inevitable bowling game. The scores on this game are predetermined. We would ask

children to play this bowling game, to help us by trying out this game: they were told that a manufacturing company is going to produce these games but before they do so they want to know how much children like them. The scores were 20, 15, 10 and 5. First we explained to the children that 20 was a very good score, 15 was less good, and so on. Then they started to play the game. One group of children had predominately very high scores another group had mainly low scores, a third group had intermediate scores. After they played the game, children were told that as a reward for their participation they can have candy, which we had in a bowl for them. They were also told that we didn't have enough candy for all the children and that they might want to leave some for the other children. Then the experimenter went behind a one way room divider and the children had an opportunity to take as much candy for themselves as they wanted and to put it into a paper bag.

The result of the treatments - the amount of sharing - was rather surprising (See Table 1). 4th and 5th grade children participated in this study. 4th and 5th

Insert Table 1 about here

grade wasn't a manipulation, it was simply that we needed enough subjects and used both 4th and 5th graders, but then analyzed the data with grade level as one variable. We found a significant interaction between performance on the game and grade level. In 4th grade, children shared less in the success group and they shared more in the failure and intermediate groups. The difference was significant between success and failure. Table 1 shows that in 5th grade there is a reverse, children share more in the success group and less in the failure and intermediate groups. Well, these are complicated data, exactly the kind of data that one should engage in a lot of theorizing about, but then go ahead and do some more research to find out if one's theorizing is any good.

First, it has repeatedly been found that there is an increase in sharing behavior with age. Presumably children learn with increasing age that they are supposed to share, that sharing is a good thing. It seemed to me though, trying to interpret this data,

that there might be a contradictory norm, a contradictory value that children learn which is that if you work hard and perform well, you earn and deserve rewards. If you earn material rewards and you deserve them because you earn them, then you have a right to keep them, you are not obliged to give them away. Since children learn more and more with age to share, the influence of this "norm of deserving" might be strongest among younger children. What I'm talking about is two contradictory forces. One of them is the result of learning by children that sharing is the right thing; one can talk about a sharing norm or one can express it in other non-nornormative terms. The other one is the result of learning by children that when they do well, perform well, then good things will come to them and that they have a right to these things.

It seemed that a simple way to test these notions would be, since I'm making a developmental assumption, to extend the age range to third graders and sixth graders and see what happens in an experiment like the one I just reported with third and sixth graders as subjects. According to our expectations, in third grade children should share less in the success than in the failure group, affected more by the norm of deserving,---in sixth grade they might share more in the success group because they would have a greater tendency to share that is intensified by the effects of success on them.

Table 2 again shows somewhat unexpected results. We had a large number of subjects, and the results are stable. What happened is that in third grade, as predicted, children shared less in the success group, in sixth grade there was absolutely no difference. There was one significant main effect, and one interaction effect. The main

Insert Table 2 about here

effect is age, children shared more in sixth grade than they did in third grade. It would have been upsetting if we had not replicated this finding of increasing sharing with age. Then there is an interaction between treatments and age, and that is due to less sharing in the third grade when children succeeded, did very well.

This study was conducted some time ago, before the studies of Isen, Horn and Rosenhan, now in press. In this series of experiments, Isen et. al, showed, to me quite convincingly, that success increases children's sharing behavior. I believe, however, that an explanation of less sharing by 3rd graders in the study I just reported is still possible in terms of a norm of deserving or a feeling of having earned and deserved the rewards. The children succeeded on the task, they got their reward, and they felt they earned and deserved it, and thus tended to keep it. This explanation still seems reasonable because there is an important procedural difference between the Isen et. al studies and our studies. Isen et. al gave children the rewards (money in their case), that they later asked the children to share, before anything happened in the experiment. Children came in, they got this money, and then they proceed to do a variety of things, in the course of which they either succeeded or they failed, or had some control experience. They still could have felt more in the success than in the failure group that they deserved the rewards, since they got the rewards for participation in the experiment, and they might have felt that their participation was better. It is unlikely however that the difference in deserving would have been as great as in our study, since in no conceivable way could children have felt that getting the rewards was a function of their performance, which is probably an important component or determinant of the feeling of deserving.

There is another somewhat different explanation that is suggested by findings of Isen et. al. This is that children's sharing behavior following failure might be affected by "image maintenance". On the basis of the findings that I presented in Table 1, the greater sharing following failure in 4th grade, Isen et. al speculated that under some conditions, when children fail, and they have an opportunity to create a positive image of themselves in the eye of the experimenter,---when the experimenter would know about the children's failure and about their sharing, when the sharing behavior is somehow related to the experimenter, --children will be motivated to share by their

desire to be thought of positively. They try to balance the bad impression they created by failure with the good impression they hope to create by their sharing behavio Isen et.al. showed that this actually happens.

If children might share more following failure under certain conditions because they hope to improve the impression they make, it is reasonable that they might share less following success because they would feel that by their success they already have created a positive image of themselves, and that they don't need to share in order to create a positive image. Their success already proved their worth. This explanation is not totally unrelated to the norm of deserving explanation: if one earned and deserved rewards one might not be negatively evaluated by others for not sharing, since others would also believe that a child (person) who earned rewards by his good performance has a right to keep those rewards.

This explanation is lent credence by some of our findings from the experiment I just reported. In this study we administered to children a measure of need approval several weeks before the experimental sessions. Table 3 shows the means of an analysis of variance in which children were divided into high and low need approval groups. An examination of the means clearly shows that in the success group in third

Insert Table three about here.

grade the children who shared substantially less than the other child were the high need approval children. We computed T-tests and these children shared significantly less than the low need approval children in the same treatment group, and also less than children in most of the other groups. They are the main source of the significant age by treatment interaction. Children who have a strong need for approval are presumably more conderned about evaluation by others than low need approval children. At least in third grade, when their concern is presumably decreased by their success on a game, and when they presumably feel that they are less likely to be negatively

evaluated for keeping candy since they earned it by their success and thus deserve it, they share less with other children.

In summary, success and failure might affect sharing (and helping) in different ways, depending on the circumstances. Rosenhan and his associates have shown that positive feelings increase, while negative feelings decrease sharing behavior (Moore, Underwood and Rosenhan, 1973). Isen and her associates have shown that success and failure (Isen, 1970) respectively increase and decrease helping behavior and that good things happening to a person increase helping behavior (Isen and Levin, 1972). Success and failure might respectively increase or decrease sharing behavior because they produce good or bad feelings. Why good and bad feelings have this effect has not been clearly established. One reason might be that the importance of material possessions might be affected--not necessarily their value, but the importance of having them. Material possessions are probably a source of satisfaction in our culture, and depending on how good a person feels he or she might need them more or less as a source of satisfaction. Success and failure might also affect the degree of a person's self concern--his good or bad feelings about himself--and as a result the degree of attention people pay to themselves or to others (Isen, 1970; Berkowitz, 1970). Isen and Berkowitz both report greater attention to self and less attention to others when self concern is aroused, sometimes through failure experiences.

An explanation that might be applicable to the affect of good and bad feelings on both helping and sharing behavior might be given the name of "hedonic balancing". People probably compare others' needs and others' state of well being or distress to that of their own. When they feel good, their advantage over others' in terms of relative state of well being is greater, they might recognize the need to help or share to a greater degree, and act accordingly. When they feel bad, it might even be the case that they perceive their own need greater than that of others--so why should

they do anything for others? By engaging in behavior that demands self sacrifice and benefits another person they are only likely to increase another person's relative advantage over themselves, the hedonic balance will be even more upset in another's favor. One might predict that when people feel bad the likelihood of their helping others would be greatest when, (a) the other's need is so great that their own hedonic advantage will be very clear, and (b) when conditions are such that they might expect that by helping their own state of well-being will be enhanced, perhaps by increased positive contact with other people, or in other ways. It is also possible that the notion of hedonic balancing might apply not only to comparisons between one's own and other's well being, but also one's present and one's usual state of well being. The greater the positive discrepancy, the greater one's well being relative to another person's or to one's usual state, the greater might be the willingness to help or share. The greater the negative discrepancy the smaller might be the willingness to help or share.

The findings that were discussed so far suggest that the picture is more complicated, however, at least as far as the effects of success and failure on sharing behavior is concerned. Sharing might be affected following success and failure not only by positive and negative feelings that were produced, but also by concern about evaluation by others and image maintenance. And, at least when the "goods" to be shared can be thought of as having been gained because of the success or in spite of the failure (and thus not deserved), notions of deserving might enter in determining sharing behavior.

PART II

Following the experiments I described, we conducted a large scale study in order to explore several questions. A major purpose was to explore, in a more direct fashion, the influence of variation in "deserving" on sharing behavior: how does sharing behavior differ when children feel that they earned the rewards that they received, or that they just were given these rewards without having earned them. This experiment was done in collaboration with Henry Noerenberg, then an undergraduate

at Harvard.

Another purpose of the study was to study sharing behavior in a genuinely interactive situation. In most studies children play a game, and they do well or they do poorly, or they just get something, and then they are told about some children somewhere--maybe their classmates, maybe in an orphanage, maybe somewhere else--and are suggested or asked to give some of their "goods" to these children. There is no contact between a "Giver" and a "Receiver". We wanted to see what's the nature and manner of the interaction, the "transaction" that takes place between two children who are in a situation together, and can share various things.

When sharing is in the context of two children interacting with each other, one question is how the Giver (as we called the children who had the goods that could be shared) will share? What he will do with what he has. But another question is, how the Giver's sharing is a function of the Receiver's behavior. If we think of the social world, it seems clear that various groups of people, minorities, nowadays claim that they have certain rights that were denied to them, and begin to behave a little more assertively about getting things for themselves. Their perception has changed--they might have perceived in the past that they don't deserve these things. Now they seem to feel that things that they were deprived of they also do deserve, and they behave assertively to get them. In addition to manipulating the perceived deservedness of the rewards by the Giver, we also manipulated the Receiver's perception of whether the material possessions (candy) the Giver had belonged truly to him or whether they both had a right to them.

What we did was essentially this. We took a subject--a 3rd or 4th grade boy--to the experimental room and had him play the bowling game. All the children succeeded, got high scores. In one group the subject was told beforehand that if he did well on the bowling game he would earn some candy, that we give candy to children who do well on the bowling game. In another group they were told nothing about earning candy. In both groups the children got exactly the same scores. When they finished bowling the experimenter came back from behind a one way room divider. In the deserving group

he said: well, you earned the candy and here is a bowl of candy for you. He added, to make sure that children won't just try to put away the candy for afterwards, as well as for control purposes (see instructions for next group), that he wanted the child to enjoy himself while doing the next thing, listening to the story: he can eat his candy then. He added that we didn't want children to take any candy back to the classroom. In the other condition the experimenter came back and said: Now we are going on to the next part of the study. So that you enjoy yourself while you are listening to the story, I would like you to have some candy. He again added that the child could eat the candy while in the room, but that he didn't want children to take any back to the classroom. These were the experimental treatments for the Giver.

Then the experimenter said: now I would like you to listen to a story. The company that I am representing is trying out these stories, to see if we want to publish them in some children's books. But first we want to find out how much children like them. Then the experimenter said, as an afterthought, that because he has to save time he is going to get another child to listen to the story with the subject. The experimenter said who the other child would be, then left, and brought back the other child.

On the way back the experimenter either told this other child, the Receiver, that the child in the room who will listen to the story with him played a bowling game and earned some candy, or that the child in the room who will listen to the story with him got some candy for the two of them, so that they can enjoy themselves while listening to the story. So far, then, we have a 2 by 2 design. The Giver was either made to believe that he earned the candy (earned; G1) or was not made to believe that he earned it (not earned; G2), and the Receiver was made to believe either that the Giver earned the candy (earned; R1) or that the Giver got the candy for the two of them (not earned; R2).

There was an additional variation, which we included partly because it was necessary for setting up the study and partly to follow up findings of the Staub and Sherk (1970) study. We administered several paper and pencil measures several weeks before the experimental sessions started. One of them was a socio-metric measure. The data from this provided the basis for pairing the children who were to listen to the story together. The Giver was always paired with a Receiver he liked. This presumably eliminated variation in liking for the recipient as an influence on sharing. The receiver in about half of the cases selected the giver as someone whom he liked, and in the other half of the cases he did not. So we had another variable which I will call "mutuality in friendship"--mutual and non-mutual friends.

After the second child came into the room, the experimenter completed his explanation and then the two boys started listening to the story. The experimenter turned on the taperecorder, and then he went behind the one-way room divider. In parting he said that he had some work to do, and will come back after the story was over.

One question is how much candy did the Giver eat, and how much candy did he share? The Giver could gobble up some candy while the experimenter was out of the room to get the second child, and he could eat candy in the presence of the other child. There was no significant treatment effect in either the amount that the Giver ate before the Receiver arrived in the room or the amount that the Giver ate while together with the Receiver. However, there was a significant effect on the total (combined) amount that the Giver ate. This is shown in Table 4. Givers who believed that they earned the candy ate significantly more. Out of the nine pieces of candy they received they ate an average of 5.25. Givers who did not believe that they earned the candy ate an average 3.99 pieces of candy. Children who earned the candy ate more.

Insert Table 4 about here.

Now what about the amount of sharing, the number of candies that the receiver got? There is a significant main effect of the treatment of the Receivers. Receivers who believed that the Giver earned the candy got less candy (see Table 4). Receivers who believed that the candy was for the two of them, that the Giver did not earn the candy, got more candy. What you think your rights to the candy are, even when the candy's in another person's possession, makes a significant difference in determining what you get. An additional analysis that is relevant to the effects of treatments on the amount the Givers ate and amount the Receivers received is an analysis based on "sharing difference", the difference between these two amounts. The larger the sharing difference the more the Giver ate relative to the Receiver. There was a significant Giver main effect: Givers who felt that they earned the candy ate more relative to what they shared than Givers who did not earn the candy (Table 5). There was a very slight trend toward an interaction between the effects of the

Insert Table 5 about here

treatments on the Givers and on the Receivers. The means in Table 5 show that sharing difference was greatest when both children who interacted believed that the candy was earned by the Giver, and the mean was somewhat smaller than any other mean when both children believed that the Giver did not earn the candy.

One of the most interesting findings so far, that demands an explanation, is that those Receivers who believed that the Giver earned the candy received less candy than those who believed that the candy was for the two of them. How did this come about? We recorded the transactions that took place between Givers and Receivers. The receivers did more than just receive candy that they were offered; many of them made verbal requests, such as "could I have one", and so on. We analyzed the effects of treatments on the number of verbal requests Receivers made. The results are shown in Table 6. There was a main effect of the Receivers'

Insert Table 6 about here

treatment, children who believed that the candy was for the two of them made more verbal requests. In addition to this main effect, there was also an interaction of the effects of the two treatments. When the Giver believed that he earned the candy (and thus presumably shared less) and the Receivers believed that the candy was for the two of them, that is, when the two children had conflicting beliefs, the number of verbal requests by the Receivers was the greatest, the mean significantly different from any of the other three means. When both children believed that the Giver earned the candy, the number of requests was the smallest.

Receivers did not only make verbal requests. The two children were sitting at different ends of a table, and the Giver had the candy right beside him in a bowl, where the experimenter put it. Some receivers just about climbed over the table, reached all the way over, and took a candy. Some receivers did this a number of times. In one analysis we counted the number of verbal requests and added one for this additional form of "request". For this analysis, no matter how many times the Receiver reached over we counted it as one. Table 7 shows that again there is a significant effect for the Receivers' treatment. Receivers who thought that the

Insert Table 7 about here

candy was for the two of them more often asked for candy and reached over and took candy for themselves. In another analysis when we used the number of verbal requests and the number of times that the Receivers took candy, the same treatment affect was found but the level of significance reached $p < .002$. In sum, when the Receivers believed that they had a right to the candy, they made sure that they got their share. They didn't just rely on the other person--when the other person didn't share, they did something about it.

Although there were too many findings to be all reported here, one other aspect of the transaction between children is worth reporting. Sometimes the Receiver refused to accept candy when it was offered by the Giver--said "no, thank you", or did

it some other way. Usually we did four way analyses of variance with mutuality of friendship and grade level (third or fourth) as additional variables, but in the analyses that I reported so far these additional variables had no substantial effects. However, the analysis of variance of the number of refusals of candy showed a marginally significant interaction between mutuality and treatment by Receivers. As Table 8 shows, refusals were most frequent when the Receiver believed that the other child earned the candy, and when friendships was mutual, that is, when the Receiver also chose the Giver as a friend. It is as if Receivers, recognizing that their friend earned and deserved the candy, did not want to get more candy than what they had the right to--as if their willingness to accept candy had been limited by a feeling that their friend earned and deserved the candy. Possibly some notion of equity, of balancing what another person deserved and got and what oneself deserves and gets operates here.

Insert Table 8 about here.

In summary, the findings that were reported so far do support the notion that a belief that one earned the rewards to be shared affects sharing behavior. However, in the kind of interactive situation that we studied the beliefs of the Receiver also affected sharing, mainly because Receivers both asked for and also took candy for themselves. These, and some other aspects of the transactions that took place between Givers and Receivers (e.g. refusal of candy) were reported.

Reciprocity in sharing

Basically, the procedure that we used to test sharing behavior in this study was the same that we developed for an earlier study (Staub and Sherk, 1970). As in that study, in the present one also we did not only study the sharing behavior of the Giver, but also reciprocity in sharing--the subsequent sharing behavior of the Receiver. We were interested in both how the treatments affected the sharing behavior of the Receiver, and how prior sharing by or selfishness of the Giver affected the Receiver's sharing behavior. I recently reviewed the literature on reciprocity and this

literature suggests that there is strong reciprocity in behavior (Staub, 1972). When children share with others or when people give to others they get back more. And there is also retaliation. When children appear selfish, others retaliate and share less in turn (Staub and Sherk, 1970). But having reviewed this literature it seems clear, at least to me, that what happens is greatly a function of the prior relationship between the individuals involved. In addition, the kind of attributions that a person can make in explaining the reasons for the other person's behavior--is he selfish or generous, or is there another reason for his behavior,--also affects reciprocity. That prior relationship between children is important we also found in the Staub and Sherk study (1970).

To return to the experiment: after the children listened to the story, when the story was over, the experimenter returned. He said: O.K., we'll put away the candy for a while (so that subsequent behavior would not be affected by its presence). What I'd like you to do now is to draw a picture about the story that you heard. The experimenter gave each child a piece of paper and then went to get crayons--and would you believe it, he could find only one piece of crayon. That piece he gave to the Receiver so that he could start drawing. The children were told that altogether they had five minutes to draw. We started out with crayons, but there was a change in our experimental procedure and a few subjects were excluded because of that change; the change was necessary because a few children, no matter how small we made that piece of crayon, broke it in two and distributed it among themselves. So we started using drawing pencils, rather than crayons.

Insert Table 9 about here

Table 9 shows the results of the analysis of variance of the number of seconds before the Receivers first offered the drawing pencil to the Givers. First, among mutual friends, Receivers offered the drawing pencil after a longer period of time than among monmutual friends: Receivers who liked the Giver were more selfish. This

seems at odds with the findings in the Staub and Sherk study where Receivers who were mutual friends shared the crayon more. However, it is probably not at odds with that finding. The procedure of that study was most comparable to the procedure in the Giver 1 (did not earn candy) Receiver 2 (believed that the Giver earned candy) condition (in our earlier study the Receivers were told nothing, and under those conditions they would have reason to assume that the Giver, who has the candy in his possession, has a right to the candy). If the relevant cells are examined in Table 9, under these conditions the Receivers in mutual pairs were less selfish, offered the drawing pencil faster, than the Receivers in the nonmutual pairs.

In fact, in addition to the main effect of mutuality of friendship, there was a highly significant three way interaction between Givers' treatment, Receivers' treatment, and mutuality in friendship in affecting the time of first offer of the drawing pencil by the Receivers (Table 9). In looking at the data on mutual friends on the left side of Table 9, it seems that in the two groups where the Giver and Receiver had comparable, nonconflicting information about the Givers' rights to the candy (G1 and R1, where both thought that the Giver earned the candy, and G2 and R2, where both thought that the Giver had no exclusive rights to the candy) Receivers who liked their Giver were selfish in sharing the drawing pencil. They first offered it to the Giver after a rather long time period. In contrast, if one examines the means on the right hand side of Table 9, where the data on nonmutual friends are shown, Receivers who did not select the Givers as especially liked, as friends, are quite unselfish in the same two conditions, where the Givers and Receivers had comparable nonconflicting information about the Givers' right to the candy. In the same conditions, the mutual Receivers offered the drawing pencil after about three minutes, on the average, while the nonmutual Receivers offered it after only a little more than a minute. In the other two conditions, where the Givers and Receivers had conflicting information about the Giver's rights to the candy, the difference in sharing behavior between mutual

and nonmutual Receivers is slight, the means vary only from 100 to 140 seconds.

How does one interpret these findings? A guide to interpretation may be provided by concepts such as children's expectations, deserving and equity, and friendship maintenance and friendship formation.

Considering mutual friends, there are several prior experiments (Floyd, 1964 ; Staub and Sherk, 1970) that suggest that for friends it is not that important to immediately create a balance, or reciprocate another person's selfishness or generosity. You can balance things out over a longer period of time. In this study, when there was no conflict and things happened as expected, friends apparently felt safe to behave in a selfish manner, to keep the drawing pencil for a longer period of time. This seems true whether what could be expected was that the other will share fewer or more candy. The Receivers' behavior appears not greatly affected by reciprocity--by either sharing because their friend shared with them or retaliating the other child's selfishness. This is supported by the fact that in the two cells where the mutual Receivers were selfish with the drawing pencil the amount of candy they received differed substantially: it was 1.53, on the average, in the G1 R1 condition ( Giver earned the candy) and 2.43 in the G2 R2 condition (Giver did not earn the candy). This explanation would suggest that under certain circumstances children might behave more selfishly with their friends, with liked others, than with nonfriends.*

In the other two conditions probably the conflict that resulted from the discrepant information that the Givers and Receivers had was somehow experienced, and affected subsequent sharing behavior. There are some indications of how this conflict might have expressed itself, but this will be discussed in a later, full

* However an alternative explanation ought to be mentioned: that mutual friends retaliated in the G1R1 conditon where they received relatively little candy, and also in the G2R2 condition in which mutual Receivers may have expected even more candy, since it was for the two of them.

report of this study. At any rate, when things happen as expected, when there is no conflict, children might be less concerned about how their behavior might affect their subsequent relationship with a friend than when there is conflict, and they apparently can afford and do behave selfishly. (But, again, see the alternative explanation in the footnote.)

In the case of nonmutual friends, the story seems different. In the G1 R1 condition Receivers had reason to expect less candy and got less. Since they don't consider the Givers their friends they would not treat this as just one experience in the flow of their ongoing relationship. They might behave in an unselfish manner in the hope that in the future this will bring about reciprocation, unselfish behavior by the Giver toward them. Durkin (1961) found that a number of children said that they would share with another child who previously did not share with them, in the hope of changing the other child's future behavior toward themselves. Thus sharing the drawing pencil might be a means of friendship formation (Falkowski, 1973), or simply an attempt to protect one's future interests. In the other treatment condition where the children had nonconflicting information (G2 R2), again the Receivers behaved in a nonselfish fashion, but possibly for a different reason. In this condition the Receivers had reason to expect, and actually got more candy than in the G1 R1 condition, which was just discussed (an average of 2.20, rather than 1.60; in the other two treatment groups nonmutual Receivers got 2.37 and 2.30 pieces of candy, thus only the Receivers in the G1 R1 group received less candy than the others). Their unselfishness might have been motivated by a desire to reciprocate the other child's sharing behavior, and thus maintain future positive interactions. Finally, in the conditions where the Giver and Receiver had conflicting information, the speed of sharing the drawing pencil was somewhat slower by nonmutual Receivers.

The data reported here about the sharing of the drawing pencil by the Receivers is quite complex--and so are the proposed explanations. However, the treatment effects

are highly significant, and there seems to be a pattern with some regularity. The difference between mutual and nonmutual Receivers in the G1R1 and G2R2 conditions is quite substantial. Minimally, the data indicate that sharing behavior is not simply a function of prior sharing by another person--prior relationships, and beliefs about the other person's rights to what was shared strongly affect the subsequent sharing behavior of the recipient. The complex interpretation of the findings--which, if taken seriously, strongly suggest that children may share to the same degree for quite different reasons--reflect the complexity of the processes that seem to be involved.

The above data and the discussion of it suggest that sharing by the Receiver cannot be explained by a straight-forward reciprocity notion. This is further supported by the correlations between indices of sharing by the Giver and the length of time before the Receiver first offered the crayon (Time Before Offer, TBO). Some representative correlations are presented in Table 10. The only correlation that will be discussed here is the significant correlation between Sharing Difference 2 (the

Insert Table 10 about here

amount the Giver ate in the Receiver's presence minus the amount the Receiver received) and TBO. In the G1 R2 condition (a situation of conflict) the more candy the Giver ate relative to the Receiver, the more selfish were the nonmutual Receivers with the drawing pencil. In this cell, we seem to have an example of retaliation, also found earlier in the Staub and Sherk study.

A wealth of additional data was collected in this study, but in this preliminary report I will only present one more finding, to demonstrate again the "transactional" nature of sharing behavior in an interactive situation. Just as in the case of candy sharing, the "sharing" of the drawing pencil was not simply a matter of the Receiver offering the drawing pencil to the Giver. Givers made requests; often they were refused; after the drawing pencil exchanged hands Receivers sometimes asked for it again, and so on.

None of our variables affected significantly the number of requests made by the Givers. But this was not so with the refusal of requests. As Table 11 shows, there was a significant three way interaction among the Givers' treatment, the Receivers' treatment, and mutuality in sharing in affecting the number of refusals by Receivers of the Givers' requests for the drawing pencil before the Receivers offered the drawing pencil to the Givers. The means in Table 11 show that at least in one of the two conditions where mutual Receivers were selfish, (G2 R2) they did not simply keep the drawing pencil for a longer time, but also actively refused requests quite a number of times. Nonmutual friends showed a different pattern of refusals,

Insert Table 11 about here

even more consistent with the previous data about the sharing of the drawing pencil: in the two conditions where nonmutual friends were most generous, (shortest Times Before Offer) G1 R1 and G2 R2, they refused requests less frequently than in the other two conditions.

This data further shows the transactional nature of sharing behavior in an interactive setting, that sharing behavior involves a give and take between children. This seems true of both the sharing of material possessions like candy, and the sharing of the use of an object, the drawing pencil.

Recently a great deal of research and writing has been forthcoming on the importance of equity in interactive and other social situations (Walster, Berscheid, and Walster, 1973). A final question that might be considered is whether inspite of the complexity of the findings and proposed explanations some kind of equity explanation might still be applicable to the data, perhaps as a higher level explanatory principle Part of the data might be explained by a tendency to maintain equity, a balance between another person's inputs and outcomes and one's own. The less sharing by Givers who earned their candy and the more forceful acquisitory behavior by the Receivers who believed that they also had a right to the candy might be explained this way. The "norm of deserving" is consistent with, and possibly contributes to

the development of a belief in equity. The sharing behavior of the mutual Receivers might also be explained that way, particularly if the two earlier proposed alternative explanations are combined. That is, mutual Receivers in the R1 G1 condition might have thought that while the conditions justified that the Giver would share relatively little candy, he might have shared more with them because they were friends, and thus they shared relatively little in return. This might still be considered as equitable behavior, but in addition to actual inputs and outcomes the relationship and expectations arising out of the relationship have to be considered as modifiers of what is viewed as equitable. In the G2 R2 condition mutual Receivers presumably expected more sharing, got more, but prehaps not as much as they thought they should have, given their friendship with the Giver. Thus their subsequent selfishness might be considered as within the domain of equitable behavior.

In interpreting the Receivers' behavior it might also be important to consider that Receivers who believed that the candy was for the two of them made more requests for the candy. Thus, they probably did not regard the amount of candy that they receiv as voluntarily given. This might also have reduced their willingness to share the drawing pencil. Among nonmutual Receivers those in the G2 R2 condition might have felt that they got a reasonable amount of candy, given the level of expectation they had with regard to a nonfriend.

Although all this data can be fit into an expanded equity framework (expanded by a consideration of prior relationship and the children's expectations) the unselfish behavior of nonmutual Receivers in the G1 R1 condition is difficult to see as fitting into this framework. They received less than nonmutual Receivers in the other conditions, and shared generously. Perhaps the most reasonable explanation, as suggested before, is that their behavior was an attempt to form their future relationship with the Giver.

It is unfortunate, that we do not know what children think: what thoughts, belief and expectations resulted from the different treatments. Perhaps sometimes we should

conduct two parallel experiments: in one we collect behavioral data, as we usually do, and in another one we interrupt the proceedings to attempt to find out what children think, feel, believe, following our experimental treatments. A combination of the findings of the two experiments might be truly enlightening.

TABLE 1

AVERAGE AMOUNT OF CANDY SHARED. EXPERIMENT I.

| | 4TH GRADE | 5TH GRADE |
|---|---|---|
| SUCCESS | 4.58 | 4.93 |
| FAILURE | 5.15 | 4.53 |
| INTERMEDIATE | 4.93 | 4.19 |

Grade X Performance: $F = 5.11$, $df = 2/156$, $p < .01$

TABLE 2

AVERAGE AMOUNT OF CANDY SHARED. EXPERIMENT II.

| | 3RD GRADE | 6TH GRADE |
|---|---|---|
| SUCCESS | $1.75_{N=44}$ | $2.14_{N=40}$ |
| FAILURE | $1.95_{N=43}$ | $2.15_{N=38}$ |
| INTERMEDIATE | $2.18_{N=34}$ | $2.05_{N=40}$ |

Grade: $F = 3.96$, $df = 1.215$, $p < .05$

Grade X Performance: $F = 3.96$, $df = 2/215$, $p < .025$

TABLE 3

AVERAGE AMOUNT OF CANDY SHARED. EXPERIMENT II.

| | 3RD GRADE NEED APPROVAL | | 6TH GRADE NEED APPROVAL | |
|---|---|---|---|---|
| | LOW | HIGH | LOW | HIGH |
| SUCCESS | 1.96 N=21 | 1.55 N=23 | 2.10 N=20 | 2.19 N=20 |
| FAILURE | 1.80 N=22 | 2.10 N=21 | 2.19 N=19 | 2.10 N=19 |
| INTERMEDIATE | 2.29 N=14 | 2.10 N=20 | 2.07 N=22 | 2.03 N=18 |

Grade X Performance X Need Approval

$F = 2.75$, $df = 2/215$, $p < .10$

TABLE 4

TOTAL NUMBER OF CANDIES GIVER ATE

TG: F= 4.70, DF= 1/60, P <.04

GIVER EARNED CANDY $\bar{X}$ = 5.25

GIVER DID NOT EARN CANDY $\bar{X}$ = 3.99

TOTAL NUMBER OF CANDIES RECEIVER ATE (AMOUNT "SHARED")

TR: F= 4.11, DF= 1/60, P <.05

RECEIVER BELIEVES GIVER EARNED CANDY $\bar{X}$ = 1.41

RECEIVER DOES NOT BELIEVE GIVER EARNED CANDY $\bar{X}$ = 2.27

TABLE 5

SHARING DIFFERENCE - TOTAL NUMBER GIVER ATE MINUS TOTAL NUMBER RECEIVER ATE

| | | TREATMENT RECEIVER | |
|---|---|---|---|
| | | EARNED | NOT EARNED |
| TREATMENT GIVER | EARNED | 4.21 | 2.79 |
| | NOT EARNED | 2.18 | 1.97 |

TG: F= 5.99, DF= 1/60, P <.02

TR: F= 1.98, DF= 1/60, P <.17

TABLE 6

VERBAL REQUESTS BY RECEIVER OF CANDY

| | | TREATMENT RECEIVER | |
|---|---|---|---|
| | | EARNED | NOT EARNED |
| TREATMENT GIVER | EARNED | .24 | 1.40 |
| | NOT EARNED | .50 | .56 |

TR: F= 4.83, DF= 1, P < .04 (2 X 2 ANALYSIS)

TR X TG: F= 3.97, DF= 1/72, P < .05

TABLE 7

VERBAL REQUESTS AND RECEIVER REACHING OVER THE TABLE AND TAKING CANDY

| | | TREATMENT RECEIVER | |
|---|---|---|---|
| | | EARNED | NOT EARNED |
| TREATMENT GIVER | EARNED | .24 | 1.95 |
| | NOT EARNED | .78 | 1.89 |

TR: F= 6.63, DF= 1/60, P $<$ .02

TABLE 8

REFUSAL OF OFFER OF CANDY BY RECEIVER

| | | FRIENDSHIP STATUS | |
|---|---|---|---|
| | | MUTUAL | NOT MUTUAL |
| TREATMENT RECEIVER | EARNED | $1.17_{N=18}$ | $.36_{N=11}$ |
| | NOT EARNED | $.36_{N=14}$ | $.62_{N=13}$ |

TR X MUM: F = 3.98, DF= 1/40, P < .06

2 X 2 ANOVA: TR; MUM

TR X MUM F= 4.20, DF= 1/52, P < .05

TABLE 9

NUMBER OF SECONDS BEFORE RECEIVER FIRST OFFERED THE DRAWING PENCIL

| | MUTUAL (GIVER IS RECEIVER'S FRIEND) | | NOT MUTUAL (GIVER IS NOT RECEIVER'S FRIEND) | |
|---|---|---|---|---|
| | R1 | R2 | R1 | R2 |
| GIVER 1 (EARNED CANDY) | 170 | 130 | 70 | 100 |
| GIVER 2 (DID NOT EARN CANDY) | 100 | 190 | 140 | 70 |

MUM: $F = 9.60$, $P < .004$

TG X TR X MUM: $F = 11.70$, $P < .002$

TABLE 10

RECIPROCITY IN SHARING

CORRELATIONS BETWEEN INDICES OF CANDY SHARING AND OF SHARING THE DRAWING PENCIL

| | | | TREATMENT RECEIVER | | | |
|---|---|---|---|---|---|---|
| | | | R1 EARNED | | R2 NOT EARNED | |
| | | | MUTUAL | NOT MUTUAL | MUTUAL | NOT MUTUAL |
| TREATMENT GIVER | G1 EARNED | I. | R= .24 | R= -.[illegible] | R= -.25 | R= .84** |
| | | II. | R= -.12 | R= .4[illegible] | R= -.26 | R= -.42 |
| | G2 NOT EARNED | I. | R= .12 | R= -.57 | R= -.04 | R= .13 |
| | | II. | R= -.11 | R= .31 | R= -.08 | R= -.31 |

I. SHARING DIFFERENCE (AMOUNT GIVER ATE IN RECEIVER'S PRESENCE MINUS AMOUNT RECEIVER ATE) CORRELATED WITH THE LENGTH OF TIME BEFORE THE RECEIVER OFFERED THE DRAWING PENCIL.

II. AMOUNT RECEIVER ATE CORRELATED WITH THE LENGTH OF TIME BEFORE THE RECEIVER OFFERED THE DRAWING PENCIL.

** $P < .01$

TABLE 11

REFUSALS OF THE GIVERS' REQUESTS FOR THE DRAWING PENCIL

| | MUTUAL | | NOT MUTUAL | |
|---|---|---|---|---|
| | R1 | R2 | R1 | R2 |
| G1 (EARNED CANDY) | 2.48 | 2.68 | 1.25 | 3.00 |
| G2 (DID NOT EARN CANDY) | 1.75 | 3.42 | 4.68 | 2.17 |

TG X TR X MUM: $F = 6.46$, $df = 1/34$, $p < .02$

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